How to Use This Guide

Use this guide to quickly set up your Enterasys® K-Series line card.

For complete installation instructions, information about the K-Series line cards, specifications, and safety warnings, see the *Enterasys K-Series Chassis Hardware Installation Guide* for your K-Series chassis at https://extranet.enterasys.com/downloads.

Installing K-Series Line Cards

Electrical Hazard: Only qualified personnel should perform installation procedures.

Handling a K-Series Line Card

Caution: The K-Series line cards are easily damaged by electrostatic discharge.

To prevent electrostatic damage, observe the following guidelines:

- Remove the K-Series line card from its packaging only when ready to install it.
- Do not touch the line card's pins, connectors, or components.
- Hold the line card by its edges or front panel only.
- Wear a grounded, anti-static wrist strap when handling the line card.
- Store or transport the line card only in anti-static packaging.

Required Tools

This installation requires the following tools:

- Anti-static wrist strap
- Phillips screwdriver

Line Card Installation Procedure

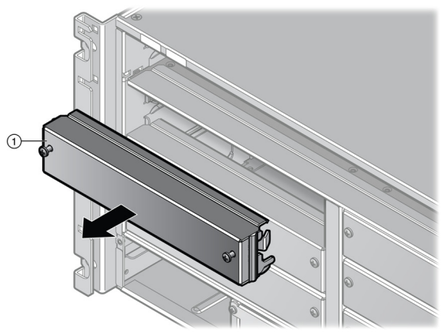
Caution: Before installing a K-Series line card, ensure that you are properly grounded to avoid electrostatic discharge. However, since you can hotswap the line card, the K-Series chassis will continue running.

Note: In the K10 chassis, slot 10 supports only a four port 10G line card.

To install a K-Series line card:

1. Attach the anti-static wrist strap. Refer to the instructions on the anti-static wrist strap package.
2. If a coverplate is installed in the line card slot, loosen the coverplate's two captive screws approximately half an inch. Pull on one of the captive screws to remove the coverplate. See Figure 1.

Figure 1 Removing a Coverplate from a Line Card Slot



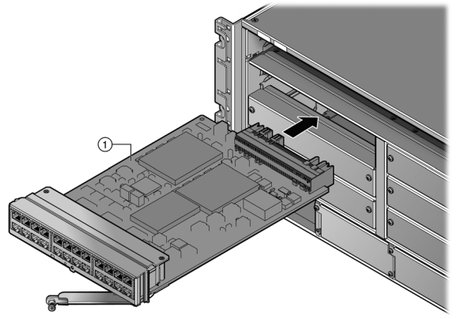
1 Line card coverplate

3. Open the ejector handle of the line card.

   The open position is approximately a 45° angle away from the line card faceplate. The ejector handle must be open when inserting the line card to allow the line card to be installed properly.

4. Gently slide the line card into the slot until the line card engages the connector on the backplane. See Figure 2.

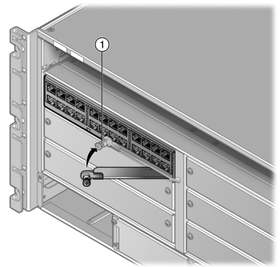
Figure 2 Inserting a Line Card into the Chassis



1 Line card

5. Push the ejector handle toward the center of the line card, as shown in Figure 3, until the line card locks into place and is flush with the chassis.

Figure 3 Engaging Ejector Handle



1 Captive screw

6. Tighten the line card's captive screw.

Installing SFP or SFP+ Pluggable Transceivers

Warning: Fiber-optic SFP and SFP+ ports use Class 1 lasers. Do not use optical instruments to view the laser output. The use of optical instruments to view laser output increases eye hazard. When viewing the output optical port, power must be removed from the network adapter.

This installation procedure applies to all SFP and SFP+ transceivers. To install an SFP or SFP+ transceiver in a K-Series line card:

1. Attach the anti-static wrist strap. Refer to the instructions on the anti-static wrist strap package.
2. Remove the SFP or SFP+ from the packaging.

   If there is a protective dust cover in the SFP or SFP+ connector, DO NOT remove it at this time.
3. Hold the SFP or SFP+ transceiver so that the connector will seat properly.
4. Carefully align the SFP or SFP+ with the port slot.
5. Push the SFP or SFP+ into the port slot until the transceiver clicks and locks into place.

SFP and SFP+ Fiber-Optic Specifications

For SFP and SFP+ transceiver specifications, refer to the datasheet at http://www.enterasys.com/company/literature/transceivers-ds.pdf.

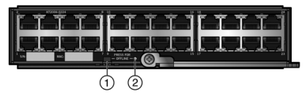
Removing a Line Card

To remove a K-Series line card:

1. Press the line card's OFFLINE button and wait for the STATUS LED to change from green to amber to off. See Figure 4.

   When the STATUS LED goes off, you can safely remove the K-Series line card from the chassis.

Figure 4 Line Card OFFLINE Button



1 OFFLINE button **2** STATUS LED

Caution: DO NOT remove a line card without first pressing the OFFLINE button. Service may be interrupted if you do not press the OFFLINE button before removing a line card.

2. Loosen the captive screw on the line card's ejector handle.
3. Open the line card ejector handle to a 45° angle.
4. Slide the line card out of the chassis.
5. If you are not installing another line card in the slot, install a line card cover plate over the slot to ensure proper airflow.

   Orient the line card cover plate so that the key on the cover plate is at the bottom.

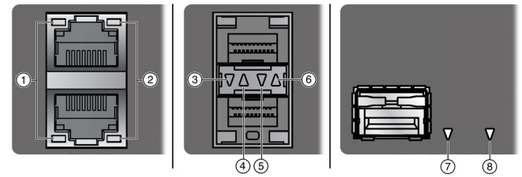
For complete removal instructions, see the Enterasys K-Series Chassis Hardware Installation Guide for your K-Series chassis at https://extranet.enterasys.com/downloads.

LEDs

The K-Series line cards provide port LEDs, as shown in Figure 5.

For information on mini-RJ21 port LEDs, see the *Chassis Hardware Installation Guide* for your K-Series chassis.

Figure 5 Port LEDs (RJ45, SFP, and SFP+ Ports)



1	RJ45 port RX LEDs	**3**	SFP RX LED for bottom port	**5**	SFP TX LED for bottom port	**7**	SFP+ RX LED
2	RJ45 port TX LEDs	**4**	SFP RX LED for top port	**6**	SFP TX LED for top port	**8**	SFP+ TX LED

Table 1 describes the port LED indications. Table 2 describes RJ45 port LEDs in PoE mode. You can switch the RJ45 ports to PoE mode or RX/TX mode by pressing the red POE button on the fabric card (see Figure 6).

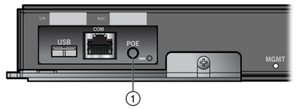
Table 1 Port LEDs

LED	Activity	Status
RX (Receive)	None	No link. No activity. Port enabled or disabled.
	Green	**Solid**. Link present, port enabled, no traffic is being received by the interface.
	Amber	**Flashing**. Link present, port enabled, traffic is being received by the interface.
TX (Transmit)	None	Port enabled, but no activity.
	Green	**Flashing**. Indicates data transmission activity. Flashing frequency indicates the data rate.
	Amber	**Solid**. Fault or error.

Table 2 RJ45 Port LEDs—PoE Mode

RX LED Color	TX LED Color	State
Green	None	There is a connection to the PD and there is 48VDC at the RJ45 connector.
None	Amber	Port is off due to overload (attached PD exceeded maximum load).
Amber	None	Port is off due to PoE power management.
None	None	Port is off due to another reason.

Figure 6 POE Button on the K-Series Fabric Card



1 POE button

Port Configuration CLI Commands

For port configuration CLI commands, refer to the *Enterasys K-Series CLI Reference Guide* at https://extranet.enterasys.com/downloads.

Line Card Specifications

Refer to the data sheet for the specifications of the currently available K-Series line cards:

http://www.enterasys.com/company/literature/k-ds.pdf

Temperature and Humidity

Operating: 5° to 45°C (41° to 113°F)

Storage: -30° to 73°C (-22° to 164°F)

Operating relative humidity: 5% to 90% (non-condensing)

Getting Help

For additional support related to K-Series line cards or this document, contact Enterasys Networks using one of the following methods:

World Wide Web	http://www.enterasys.com/support
Phone	1-800-872-8440 (toll-free in U.S. and Canada) or 1-978-684-1888 For the Enterasys Networks Support toll-free number in your country: http://www.enterasys.com/support
Email	support@enterasys.com To expedite your message, type **[K-Series]** in the subject field of your message.
The latest image, release notes, and more documentation	https://extranet.enterasys.com/downloads

Before contacting Enterasys Networks for technical support, have the following information ready:

- Your Enterasys Networks service contract number
- A description of the failure
- A description of any action(s) taken to resolve the problem (for example, changing mode switches, rebooting the unit)
- The serial and revision numbers of all involved Enterasys Networks products in the network
- A description of your network environment (layout, cable type, etc.)
- Network load and frame size at the time of trouble (if known)
- The device history (for example, have you returned the device before, is this a recurring problem?)
- Any previous Return Material Authorization (RMA) numbers

Related Documents

Documentation URL: https://extranet.enterasys.com/downloads

Warranty

Be sure to register your product for warranty support at:

www.enterasys.com/support/register-your-product.aspx

Warranty information for the K-Series line cards is located online at:

www.enterasys.com/support/warranty.aspx

www.enterasys.com/company/literature/enterasys-lw-ds.pdf

Notice

Enterasys Networks and its licensors reserve the right to make changes in specifications and other information contained in this document and its web site without prior notice. The reader should in all cases consult Enterasys Networks to determine whether any such changes have been made.

The hardware, firmware, or software described in this manual is subject to change without notice.

IN NO EVENT SHALL ENTERASYS NETWORKS AND ITS LICENSORS BE LIABLE FOR ANY INCIDENTAL, INDIRECT, SPECIAL, OR CONSEQUENTIAL DAMAGES WHATSOEVER (INCLUDING BUT NOT LIMITED TO LOST PROFITS) ARISING OUT OF OR RELATED TO THIS DOCUMENT, WEB SITE, OR THE INFORMATION CONTAINED IN THEM, EVEN IF ENTERASYS NETWORKS AND ITS LICENSORS HAVE BEEN ADVISED OF, KNOWN, OR SHOULD HAVE KNOWN, THE POSSIBILITY OF SUCH DAMAGES.

Enterasys Networks, Inc.
50 Minuteman Road
Andover, MA 01810

Part Number: 9034572-02 February 2012

Regulatory Compliance Information

Federal Communications Commission (FCC) Notice

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment uses, generates, and can radiate radio frequency energy and if not installed in accordance with the operator's manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause interference in which case the user will be required to correct the interference at his own expense.

WARNING: Changes or modifications made to this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Industry Canada Notice

This digital apparatus does not exceed the class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la class A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

Class A ITE Notice

WARNING: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Clase A. Aviso de ITE

ADVERTENCIA: Este es un producto de Clase A. En un ambiente doméstico este producto puede causar interferencia de radio en cuyo caso puede ser requerido tomar medidas adecuadas.

Product Safety

This product complies with the following: UL 60950, CSA C22.2 No. 60950, 2006/95/EC, EN 60950, IEC 60950, EN 60825, 21 CFR 1040.10.

Seguridad del Producto

El producto de Enterasys cumple con lo siguiente: UL 60950, CSA C22.2 No. 60950, 2006/95/EC, EN 60950, IEC 60950, EN 60825, 21 CFR 1040.10.

Produktsicherheit

Dieses Produkt entspricht den folgenden Richtlinien: UL 60950, CSA C22.2 No. 60950, 2006/95/EC, EN 60950, IEC 60950, EN 60825, 21 CFR 1040.10.

Electromagnetic Compatibility (EMC)

This product complies with the following: 47 CFR Parts 2 and 15, CSA C108.8, 2004/108/EC, EN 55022, EN 61000-3-2, EN 61000-3-3, EN 55024, AS/NZS CISPR 22, and VCCI V-3.

Compatibilidad Electromágnetica (EMC)

Este producto de Enterasys cumple con lo siguiente: 47 CFR Partes 2 y 15, CSA C108.8, 2004/108/EC, EN 55022, EN 55024, EN 61000-3-2, EN 61000-3-3, AS/NZS CISPR 22, VCCI V-3.

Elektro-magnetische Kompatibilität (EMC)

Dieses Produkt entspricht den folgenden Richtlinien: 47 CFR Parts 2 and 15, CSA C108.8, 2004/108/EC, EN 55022, EN 61000-3-2, EN 61000-3-3, EN 55024, AS/NZS CISPR 22, VCCI V-3.

VCCI Notice

This is a class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may arise. When such trouble occurs, the user may be required to take corrective actions.

この装置は，情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＡ情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

BSMI EMC Statement — Taiwan

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

警告使用者：
這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種請況下，使用者會被要求採取某些適當的對策。

AS/NZS CISPR 22

Hazardous Substances

This product complies with the requirements of European Directive, 2002/95/EC, Restriction of Hazardous Substances (RoHS) in Electrical and Electronic Equipment.

European Waste Electrical and Electronic Equipment (WEEE) Notice

In accordance with Directive 2002/96/EC of the European Parliament on waste electrical and electronic equipment (WEEE):

1. The symbol above indicates that separate collection of electrical and electronic equipment is required and that this product was placed on the European market after August 13, 2005, the date of enforcement for Directive 2002/96/EC.
2. When this product has reached the end of its serviceable life, it cannot be disposed of as unsorted municipal waste. It must be collected and treated separately.
3. It has been determined by the European Parliament that there are potential negative effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment.
4. It is the users' responsibility to utilize the available collection system to ensure WEEE is properly treated.
   For information about the available collection system, please go to www.enterasys.com/services/support/ or contact Enterasys Customer Support at 353 61 705586 (Ireland).

产品说明书附件
Supplement to Product Instructions

部件名称 (Parts)	有毒有害物质或元素 (Hazardous Substance)					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr^{6+})	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
金属部件 (Metal Parts)	×	○	○	×	○	○
电路模块 (Circuit Modules)	×	○	○	×	○	○
电缆及电缆组件 (Cables & Cable Assemblies)	×	○	○	×	○	○
塑料和聚合物部件 (Plastic and Polymeric parts)	○	○	○	○	○	×
电路开关 (Circuit Breakers)	○	○	×	×	○	○

○： 表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T 11363-2006 标准规定的限量要求以下。
Indicates that the concentration of the hazardous substance in all homogeneous materials in the parts is below the relevant threshold of the SJ/T 11363-2006 standard.

×： 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T 11363-2006 标准规定的限量要求。
Indicates that the concentration of the hazardous substance of at least one of all homogeneous materials in the parts is above the relevant threshold of the SJ/T 11363-2006 standard.

对销售之日的所售产品，本表显示，
凯创供应链的电子信息产品可能包含这些物质。注意：在所售产品中可能会也可能不会含有所有所列的部件。
This table shows where these substances may be found in the supply chain of Enterasys' electronic information products, as of the date of sale of the enclosed product. Note that some of the component types listed above may or may not be a part of the enclosed product.

除非另外特别的标注，此标志为针对所涉及产品的环保使用期标志。某些零部件会有一个不同的环保使用期（例如，电池单元模块）贴在其产品上。
此环保使用期限只适用于产品是在产品手册中所规定的条件下工作。
The Environmentally Friendly Use Period (EFUP) for all enclosed products and their parts are per the symbol shown here, unless otherwise marked. Certain parts may have a different EFUP (for example, battery modules) and so are marked to reflect such. The Environmentally Friendly Use Period is valid only when the product is operated under the conditions defined in the product manual.

Safety Information
Class 1 Laser Transceivers

The single mode interface modules use Class 1 laser transceivers. Read the following safety information before installing or operating these modules.

The Class 1 laser transceivers use an optical feedback loop to maintain Class 1 operation limits. This control loop eliminates the need for maintenance checks or adjustments. The output is factory set, and does not allow any user adjustment. Class 1 Laser transceivers comply with the following safety standards:

- 21 CFR 1040.10 and 1040.11 U.S. Department of Health and Human Services (FDA).
- IEC Publication 825 (International Electrotechnical Commission).
- CENELEC EN 60825 (European Committee for Electrotechnical Standardization).

When operating within their performance limitations, laser transceiver output meets the Class 1 accessible emission limit of all three standards. Class 1 levels of laser radiation are not considered hazardous.

When the connector is in place, all laser radiation remains within the fiber. The maximum amount of radiant power exiting the fiber (under normal conditions) is -12.6 dBm or 55 x 10^{-6} watts.

Removing the optical connector from the transceiver allows laser radiation to emit directly from the optical port. The maximum radiance from the optical port (under worst case conditions) is 0.8 W cm^{-2} or 8 x 10^{3} W m^{2} sr-1.

Do not use optical instruments to view the laser output. The use of optical instruments to view laser output increases eye hazard. When viewing the output optical port, power must be removed from the network adapter.

Safety Compliance

Warning: Fiber Optic Port Safety

CLASS I LASER DEVICE

When using a fiber optic media expansion module, never look at the transmit laser while it is powered on. Also, never look directly at the fiber TX port and fiber cable ends when they are powered on.

Avertissment: Ports pour fibres optiques - sécurité sur le plan optique

DISPOSITIF LASER DE CLASSE I

Ne regardez jamais le laser tant qu'il est sous tension. Ne regardez jamais directement le port TX (Transmission) à fibres optiques et les embouts de câbles à fibres optiques tant qu'ils sont sous tension.

Warnhinweis: Faseroptikanschlüsse - Optische Sicherheit

LASERGERÄT DER KLASSE I

Niemals ein Übertragungslaser betrachten, während dieses eingeschaltet ist. Niemals direkt auf den Faser-TX-Anschluß und auf die Faserkabelenden schauen, während diese eingeschaltet sind.

Declaration of Conformity

Application of Council Directive(s):	**2004/108/EC** **2006/95/EC**
Manufacturer's Name:	Enterasys Networks, Inc.
Manufacturer's Address:	**50 Minuteman Road** **Andover, MA 01810** **USA**
European Representative Name:	**Enterasys Networks Limited**
European Representative Address:	**Nexus House, Newbury Business Park** **London Road, Newbury** **Berkshire RG14 2PZ, England**
Conformance to Directive(s)/Product Standards:	**EC Directive 2004/108/EC** **EN55022:2006** **EN 55024:1998** **A1:2001** **A2:2003** **EN 61000-3-2:2006** **EN 61000-3-3:1995** **A1:2001** **A2:2005** **EC Directive 2006/95/EC** **EN 60950-1:2006** **A11:2009** **A1:2010** **EN 60825-1:2007** **EN 60825-2:2004** **A1:2007**
Equipment Type/Environment:	**Information Technology Equipment,** **for use in a Commercial** **or Light Industrial Environment.**

Enterasys Networks, Inc. declares that the equipment packaged with this notice conforms to the above directives.

Enterasys K-Series

Line Card

Quick Reference

enterasys®

P/N 9034572-02